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WORKSHOP SUMMARY

Workshop 11

Improving the Translational Impact of Animal Models in Musculoskeletal Research Through Better Study Design, Conduct and Reporting

Proposed by: Orthopaedic Research Society (ORS)

Workshop Leader



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Workshop Summary

The use of animals in biomedical research remains a contentious and often polarizing topic within society. Advances in non-animal alternatives such as cell and organ culture, organ on chips and computational modelling offer real potential for studying the acute response to drugs, devices and bio-physical stimuli, but still suffer from serious limitations with regard to their ability to integrate dynamic system-wide responses such as immune responses, tissue healing and repair. While there remains a critical role for animal studies in musculoskeletal research, the last decade has seen a move towards increasing awareness and regulatory oversight of the use of animals.

In this workshop, three veterinarians with research-intensive appointments in musculoskeletal research will present a framework for how to design and perform scientifically robust, clinically relevant and ethical animal studies. At the heart of this discussion will be the practical application of the fundamental tenets of the 3Rs—reduction, refinement and replacement—first proposed by Russell and Burch in 1959. Using real-world examples, the speakers will highlight the importance of selecting the correct animal model; designing a study with clinically relevant and statistically powered endpoints; and utilizing a team-based approach to make sure that

any interventional procedures are performed with technical proficiency and in a way that minimizes unnecessary pain or distress.

The workshop will also highlight the importance of appropriate study documentation and reporting, including the use of the ARRIVE guidelines for publication. The overarching goal of this presentation will be to highlight the opportunity for musculoskeletal researchers to maximize the relevance of their animal model data by basing their studies on sound ethical principles.

Speakers



Speaker 1:

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